

REMARKS

The Applicant thanks the Examiner for the thorough consideration given the present application. Claims 40, 41, 65, and 66 are cancelled herein without prejudice to or disclaimer of the subject matter contained therein. Claims 1-39 were previously cancelled. Claims 42-64 and 67-82 are pending, of which claims 49-53, 57-64, and 77-82 are withdrawn. Claims 42, 43, 45-48, 56, 67, and 71-76 are amended. Claims 42, 49, 54, 57, 67, and 77 are independent.

The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

Examiner Interview

The Applicant wishes to thank Examiner Daniel Robinson for the courtesies extended to Applicant's Representative, Carl T. Thomsen, Registration No. 50,786, during the telephone interview which was conducted on April 09, 2010. During the interview, Applicant's Representative inquired about the status of claim 42, which was not discussed in the Office Action. The Applicant's Representative stated that he believed claim 42 to be allowable if amended to delete the words "paraboloidal, ellipsoidal, hyperboloidal or," thereby limiting the shape of the thermal insulation layer in claim 42 to "a partially spherical shape".

However, in response, and without thorough analysis, the Examiner indicated that he intended to reject claim 42. The interview concluded without an agreement being reached between the Examiner and the Applicant's Representative regarding the status of claim 42.

If, during further examination of the present application, any further discussion with the Applicant's Representative would advance the prosecution of the present application, the Examiner is encouraged to contact Carl T. Thomsen, at 1-703-208-4030 (direct line) at his convenience.

Allowable Subject Matter

The Examiner states that claims 54-56 have been allowed, and that claim 43-48 and 67-76 would be allowable if rewritten in independent form.

As discussed above, the Applicant believes that claim 42 would be allowable if rewritten in independent form, and if amended to limit the shape of the thermal insulation layer to "a partially spherical shape."

The Applicant thanks the Examiner for the early indication of allowable subject matter in this application. In response,

objected-to claim 67 has been rewritten in independent form to include the subject matter of base claim 65 and intervening claim 66, and

dependent claim 42 has been rewritten in independent form to include the subject matter of base claim 40 and to delete the wording "paraboloidal, ellipsoidal, hyperboloidal or," thereby limiting the shape of the claimed thermal insulation layer to "a partially spherical shape".

Drawings

It is gratefully appreciated that the Examiner has approved the Formal Drawings submitted by the Applicant.

Restriction Requirement

The Examiner has made a Restriction Requirement final, and has withdrawn claims 49-53, 57-64, and 77-82 from further consideration. The Applicant reserves the right to file one or more divisional applications directed to claims 49-53, 57-64, and 77-82 at a later date if so desired.

Rejections Under 35 U.S.C. §102(b)

Claims 40, 41, 65, and 67 stand rejected under 35 U.S.C. §102(b) as being anticipated by Rigollet (U.S. 5,017,940).

This rejection is respectfully traversed.

Arguments Regarding Independent Claim 42

As noted above, **dependent claim 42** has been rewritten in independent form and now recites a combination of elements directed to a radiator, including *inter alia*

“a thermal conductive layer (25) comprising at least a partially spherical shape, defining a focal zone (15);

a radiation layer (10) comprising at least a partially spherical shape, defining a focal zone (15) and powered by an energy source (11);

a thermal insulation layer (26) comprising at least a partially spherical shape, defining a focal zone (15); and

the thermal insulation layer (26) facing the thermal conductive layer (25);

the focal zone (15) of the thermal conductive layer (25) generally coincides with the focal zone (15) of the radiation layer (10); and

the focal zone (15) of the thermal insulation layer (26) generally coincides with the focal zone (15) of the radiation layer (10) and the focal zone (15) of the thermal conductive layer (25)."

Reference numerals are added above merely for emphasis and to assist the Examiner in understanding the claimed invention.

Support for the novel features set forth in **independent claim 42** can be seen, for example, in FIGS. 1-3, and the other FIGS.

By contrast, as can be seen in column 1, lines 40-44 and FIG. 1 of the Rigollet reference, this document merely discloses "An antenna mainly comprises a reflector or principal mirror 2 which is a focal point paraboloid F^1 , a reflector or secondary mirror 4 whose surface is a focal point hyperboloid type surface F^2 and a primary source 6 placed in the focal point F^2 .

In addition, column 5, lines 7-11 of Rigollet disclose that support 10 of secondary mirror 4 is elliptic-shaped.

Moreover, the radiation source 6 of Rigollet is separate from and not powered by the claimed "energy source" of the radiator, as in the present invention. In particular,

(a) the source of radiation in antenna disclosed by Rigollet is placed at the focal point of the reflector outside of the antenna and uses the reflector for reflecting electromagnetic wave, whereas the radiation layer of **independent claim 42** is placed

between the thermal conductive layer and thermal insulation layer. It appears that the source **6** of radiation is not formally an integral part of the antenna disclosed by Rigollet, whereas the radiation layer is formally an integral portion of the radiation apparatus in **independent claim 42**;

- (b) the main function of the surfaces of the antenna disclosed by Rigollet is to reflect electromagnetic wave, whereas the main function of the surfaces of **independent claim 42** is to focus or disperse energy without any reflection of radiation. There is no reflector in the subject matter of **independent claim 42**; and
- (c) there is no focal zone in the radiation source of the antenna disclosed by Rigollet, whereas the radiation layer of **independent claim 42** has a focal zone which coincides with the focal zone of the thermal insulation layer and the focal zone of the thermal conductive layer.

At least for the reasons explained above, the Applicant respectfully submits that the combination of elements as set forth in **independent claim 42** is not disclosed or made obvious by the prior art of record, including Rigollet.

Therefore, **independent claim 42** is in condition for allowance.

Independent Claim 67

As noted above, allowable **dependent claim 67** has been rewritten in independent form and now recites a combination of elements directed to a radiator, including *inter alia*
“a partially spherical-shaped thermal conductive layer;

a radiation element being in contact with the thermal conductive layer;
a partially spherical-shaped thermal insulation layer facing the thermal conductive layer,
the thermal conductive layer defines a first focal zone;
the thermal insulation layer defines a second focal zone;
the first focal zone generally coincides with the second focal zone; and
the thermal insulation layer comprises a concave side facing a convex side of the thermal conductive layer, so that the radiation element increases temperature of the thermal conductive layer and concentrates energy to the focal zone of the radiation layer.”

Independent claim 67 is in condition for allowance.

Dependent Claims

The Examiner will note that dependent claims 43, 45-48, 56, and 71-76 have been amended to place them in better form and/or to set forth additional novel features of the invention.

All dependent claims are in condition for allowance due to their dependency from allowable independent claims, or due to the additional novel features set forth therein.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are respectfully requested.

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CONCLUSION

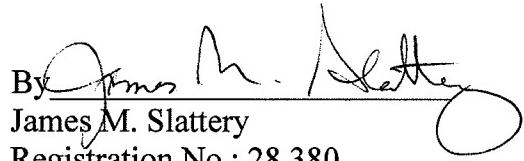
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 208-4030(direct line).

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

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Respectfully submitted,

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